

REMARKS/ARGUMENTS

By the present amendment, claims 2, 8, 9, 13, 17, 19, 64 and 65 have been amended in response to the Examiner's rejection under 35 U.S.C. § 112. Reconsideration of the application for allowance is requested in view of the foregoing amendments and the following remarks.

In the Office Action, the Examiner has rejected claims 2-29 and 64-38 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

By the present amendment, a number of the claims have been amended to overcome the Examiner's objections. However, other claims cited by the Examiner have not been amended for the following reasons.

Claim 2 was held to be indefinite because it is unclear whether a chemical compound or a combination of chemical compounds are the same or different from the cleaning solution recited in claim 1. The examiner is correct that the step recited in claim 2 does not specify whether the cleaning compound or combination of chemical compounds are the same as or different in the cleaning solution set forth in claim 1. Applicant believes that the claim is generic to both interpretations. A generic claim is not indefinite because it does not claim a particular species. The specification sets forth a number of examples as how the invention can be practiced. The invention can be practiced with an exothermic reaction by chemicals or compounds which are unrelated to the cleaning solution set forth in claim 1. See, for example, the embodiment of Figures 1-6 where the exothermic reaction is carried out with chemicals or chemical compounds which are not part of the cleaning solution and are not added to the cleaning solution. However, in the embodiments of Figures 7-10, the exothermic reaction is carried out by chemicals which are added to the cleaning solution and therefore become part of the cleaning solution. Applicant believes that claim 2 is not indefinite because it is generic to an indirect method of heating the cleaning solution and a direct method of heating the cleaning solution.

The same objection is raised with respect to claims 9-10 and 26-27 with respect to the term "reagents". The same arguments apply to these claims as apply to claim 2. The reagents

may or may not form part of the cleaning solution. See, for example, pages 11 and 37 wherein the exothermic reaction form a surfactant which becomes a part of the cleaning solution.

With respect to claims 11-12 and 17-18, Applicant believes that the term "mild acid" is a term well-known to a person of ordinary skill in the art. See, for example, U.S. Patent No. 5,733,851, issued March 31, 1998, col. 4, lines 8-12 (defining "weak acid") and U.S. Patent No. 5,750,099, issued May 12, 1998, col. 3, lines 31-38 (giving examples of weak acid). It is clear that the term "weak acid" as used in the specification and claims is well understood to those who have skill in the art of cleaning surfaces at the time of the filing of the present application. See also paragraphs 10 and 37 of the application as filed.

Withdrawal of the rejection under 35 U.S.C. § 112 is requested in view of the amendments made to the claims and the arguments set forth above.

Claims 1-3, 8-9, 24-25, and 28-29 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Pieroni et al. US2002/0112741. This rejection is respectfully traversed.

Pieroni et al. '741 discloses a motorized hand-held scrubbing and dispensing device and a method of use thereof wherein an electrical heating element 62 is provided on the exterior area 22 of the waterproof casing 20 to provide localized heat to the item to be cleaned by a scrubbing surface. Pieroni et al. '741 contemplates heating the scrubbing surface with the heating element and thereby transfers heat from the heating element 62 to the cleaning solution which is then applied to the surface to be cleaned. This disclosure is sufficient to teach one skilled in the art how to heat a cleaning solution with an electrical heating element. The Sham U.S. Patent No. 5,341,541, for example, cited by the Examiner in his Office Action, discloses how one would heat a cleaning solution with an electrical heating element.

Pieroni et al., in the same paragraph 45, further state:

... Alternatively, the heating element may be a non-electrical heating element, for example, a chemical heating element impregnated in the scrubbing surface, which employs a chemical which creates heat through an exothermic reaction when contacted with water.

This incidental disclosure in paragraph 45 of Pieroni et al. '741 is not an enabling disclosure because it does not teach one skilled in the art how a cleaning solution that passes

through the scrubbing surface in the Pieroni et al. '741 device can be heated with a compound that has been incorporated into the scrubbing surface 28. Pieroni et al.' 741 gives no example as to a chemical which creates heat through an exothermic reaction when contacted with water. The Examiner has cited no such chemical that would perform this function when contacted with water that was passing through a Pieroni et al.' 741 scrubbing surface. Therefore, Pieroni et al. '741 is not an enabling disclosure of the use of an exothermic chemical reaction for heating a cleaning fluid prior to applying a cleaning fluid to a surface. Accordingly, the Pieroni et al.' 741 reference is not prior art under 35 U.S.C. § 103 against claim 1. *In re Hoeksema* 399 F.2d 269, 158 U.S.P.Q. 596 (CCPA 1968). The sentence quoted above in Pieroni et al.' 741 is merely speculation and is an insufficient disclosure to enable one having ordinary skill in the art of surface cleaning to practice the invention of claim 1 without undue experimentation.

Further, Pieroni fails to disclose recovering soiled cleaning solution from the surface as required by claim 1. Applicant agrees that it would have been obvious to a person of ordinary skill in the art to remove the soiled cleaning solution from the surface for purposes of removing contaminants thereon. However, Applicant disagrees that removing the soiled cleaning solution from the surface includes recovering the soiled cleaning solution. The scrubbing device of the Pieroni et al.' 741 reference is used for cleaning hard surfaces such as dishes and other domestic food utensils. See Pieroni et al. paragraphs 2-5. One skilled in the art of cleaning these surfaces would normally wash away the soiled cleaning solution rather than recovering it. The cleaning solution would be washed down a drain and not recovered. As the Examiner has stated in paragraph 2 of the Office Action, the step of recovering the cleaning solution from the surface would require collecting the cleaning solution. There is no teaching of collecting a cleaning solution in the Pieroni et al.' 741 reference and one skilled in the art would not ordinarily collect soiled cleaning solution from dishes upon reading the Pierone et al.' 741 reference.

Therefore, claim 1 and the claims dependent therefrom patently distinguished over Pieroni et al.' 741 because Pieroni et al. '741 does not have an enabling disclosure with respect to heating a cleaning solution with an exothermic reaction and further does not disclose the step of recovering the soiled cleaning solution from the surface.

Claim 3 further distinguishes over Pieroni et al.' 741 in defining the exothermic chemical reaction as comprising a phase change in a compound or composition that generates heat when transforming from one phase to another phase. This concept is not disclosed in Pieroni et al.'741. The Examiner is in error in interpreting the "chemical heating element" as being a solid. There is no disclosure in Pieroni et al. '741 of a solid chemical heating element. The Examiner will note that the incidental disclosure in Pieroni et al.' 741 discloses *impregnating* the chemical heating element in the scrubbing surface. Lacking a disclosure of what chemicals can be impregnated into the scrubbing surface, and how the exothermic reaction takes place, the Examiner's representation that Pieroni et al.' 741 contemplates a phase change is without foundation.

With respect to claim 8, the Pieroni et al.' 741 reference does not disclose a phase change from one solid phase to another as set forth in claim 8. The Examiner's representation with respect to the expectation of a phase change is pure speculation and not supported by the Pierone et al.' 741 reference or in any other reference.

Claims 24 and 28 define over the Pieroni et al. '741 reference in calling for the heat of exothermic reaction to be transferred indirectly to the cleaning solution. The teaching in Pieroni et al. '741 at best is a direct heat transfer of the exothermic reaction to the cleaning solution which is set forth in Applicant's claim 25.

In view of the foregoing, it is submitted that claims 1-3, 8, 9, 24, 25, 28 and 29 patentably define over the Pieroni et al.' 741 reference.

Claims 10-23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Pieroni et al. ' 741 reference in view of the Pace et al. Patent Publication No. US 2002/0040503 (Pace et al. '503 reference). This rejection is respectfully traversed.

Pieroni et al. '741 does not teach the invention as claimed for the reasons set forth above with respect to the rejection of the claims over Pieroni et al. '741 alone. Thus, the Examiner's basic premise for the rejection of claims 10-23 is fatally flawed.

The Pace et al. '503 reference discloses a process of treating a fabric which comprises the steps of applying to the fabric two compositions that generate an exothermic reaction when they come into contact with each other to improve the fabric cleaning performance.

The alleged combination of Pieroni et al.'741 and Pace et al. '503 is traversed. There is no basis for making the alleged combination. Whereas Pierone et al. '741 relates to cleaning of hard surfaces of dishes and the like, Pace et al.'503 relates to cleaning of fabrics. The two processes are essentially different and different materials are used. Furthermore, Pace et al. '503 is directed to applying a composition to a fabric surface at which an exothermic reaction takes place whereas, at best, Pieroni et al.' 741 relates to heating a cleaning solution that is subsequently applied to the surface. The two disclosures are mutually exclusive and do not lend themselves to the alleged combination. There is no suggestion in either of the references to make the combination and the Examiner has provided no basis in either of the references which would warrant their combination. In this respect, it is noted that Pace et al. '503 applies both chemicals to the surface to be cleaned separately to conduct the exothermic reaction *in situ* rather than prior to applying the combined chemicals to the surface. The Examiner has not explained how the teachings of Pace et al. '503 could be incorporated into the Pieroni et al.' 741 process. In other words, there is no teaching in Pace et al. '503 as to how the process of applying chemical compounds to a fabric could be incorporated into the Pace disclosure because there is no mechanism for delivery of separate chemicals to a surface to be cleaned.

Even if the alleged combination of Pace et al. ' 503 with Pieroni et al.' 741 could be made, however untenably, it still would not reach Applicants' claimed invention. The alleged combination would require the acid and base to be applied to the surface prior to the heating step. Applicants' claim 1 requires the heating of a cleaning solution prior to applying the cleaning solution to the surface and thereafter recovering the soiled cleaning solution from the surface. Further, there is no disclosure in the alleged combination of references as to recovery of the cleaning solution from the surface. Therefore, claims 10-23 patentably define over the alleged combination of Pace et al. ' 503 with Pieroni et al.' 741.

Claims 64-68 have been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Pieroni et al.' 741 in view of a Sham U.S. Patent No. 5,341,541 (Sham ' 541). This rejection is respectfully traversed.

The Sham '541 reference discloses a hand-held extraction cleaning machine wherein a cleaning solution is heated with an electrical heater and the heated cleaning solution is applied to a surface and subsequently recovered from the surface.

The alleged combination of Pieroni et al.' 741 and Sham '541 is traversed. There is no basis for making the alleged combination. There is no teaching in either of the references which would suggest the alleged combination and the Examiner has given no rational basis for making the alleged combination of these two references. There is no suggestion in Pieroni et al.' 741 of removing the soiled cleaning solution from the surface of domestic utensils with a suction that is connected to the device for applying the cleaning solution and scrubbing the solution. One skilled in the art would not wish to recover soiled cleaning solution for the type of hard surfaces for which the Pieroni et al.' 741 hand held cleaner is directed. It is believed that the alleged combination Pieroni et al.' 741 and Sham '541 is inconsistent with the teaching of each of the Pieroni et al.' 741 and Sham ' 541 because the two disclosures are directed to different concepts. The Sham '541 reference is principally directed to removing stains from carpet in a conventional extractor were as Pieroni et al. '741 is directed to cleaning hard domestic utensil surfaces and the like which typically are washed off and are not recovered. Thus, it is believe that the alleged combination of Pieroni et al. '741 and Sham ' 541 is inappropriate.

Further, as set forth above, it is believed that the Pieroni et al. '741 reference is not an appropriate prior art reference against the claims of this application because it has no enabling disclosure of how an exothermic reaction could take place in the scrubbing surface to heat the cleaning solution as set forth above. It is further not seen how suction and a recovery tank could be incorporated into the Pieroni et al.' 741 cleaning device. Neither reference teaches how the combination could be made and the Examiner has provided no rational basis for making the alleged combination of these references.

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In view of the foregoing, it is submitted that claims 64, 65, and 67 patently define over the alleged combination of Pieroni et al. '741 and Sham ' 541. Claims 66 and 68 have been cancelled in view of the Examiner's representation that the step of collecting is inherent in the step of recovering the soiled cleaning fluid from a surface to be cleaned.

In view of the foregoing remarks and amendments, it is submitted that all of the claims in this application are in condition for allowance. Early notification of allowability is respectfully requested.

Respectfully submitted,

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